

What is claimed is:

1. A load conveyance device, comprising:  
a load supporting device having a through hole passing in a gravity direction; and  
a fluid supplying device to supply a fluid into the through hole;  
wherein when a load is dropped into the through hole from a top of the through hole, the load is supported under a floating condition by a force of the fluid in the through hole, and when the load is not supported by change of the force of the fluid, the load drops from a lower end of the through hole to an outside.
2. The conveyance device of claim 1,  
wherein a top section of the through hole has a tapered wall section whose inside diameter increases toward a top open end.
3. The conveyance device of claim 2,  
wherein a taper angle of the tapered wall section is greater than 0 degree and less than 90 degrees.

4. The conveyance device of claim 2, wherein a height of the tapered wall section is greater than 0.2 times and less than 2.0 times the height of the load.

5. The conveyance device of claim 2, wherein a tapered end section having the taper angle greater than that of the tapered wall section, is formed on a top open end of the tapered wall section.

6. The conveyance device of claim 1, wherein the fluid supplying device supplies the fluid through an inner circumferential plane of the through hole.

7. The conveyance device of claim 6, wherein a porous material is provided at least at a part of the inner circumferential plane of the through hole.

8. The conveyance device of claim 7, wherein a porosity ratio of the porous material is 1% or more and 30% or less.

9. The conveyance device of claim 7, wherein the porous material is graphite.

10. The conveyance device of claim 1, further comprising:

a shutter member which is positioned lower than the fluid supplying device and movable between a position for closing at least a part of the through hole and a position for opening the through hole.

11. The conveyance device of claim 1,

wherein pressure and/or amount of the fluid to be supplied are changeable.

12. The conveyance device of claim 1, further comprising:

a heating device for raising a temperature of the fluid to be higher than a room temperature.

13. The conveyance device of claim 1,

wherein the load is conveyed in a heated and fused condition.

14. The conveyance device of claim 1,

wherein a deviation from spherical form of the load is half or less than average radius  $R$  of the load.

15. The conveyance device of claim 1,

wherein the load is glass.

16. The conveyance device of claim 1,  
wherein the load is plastic.

17. The conveyance device of claim 1,  
wherein the fluid is a gas of a nitrogen concentration at 60  
mol% or more.

18. A load conveyance system comprising:  
a plurality of conveyance devices, comprising  
a load supporting device having a through hole passing  
in a gravity direction; and  
a fluid supplying device to supply a fluid into the  
through hole;  
wherein when a load is dropped into the through hole from a  
top of the through hole, the load is supported under a  
floating condition by a force of the fluid in the through  
hole, and when the load is not supported by change of the  
force of the fluid, the load drops from a lower end of the  
through hole to a outside.

19. The conveyance system of claim 18, wherein

a plurality of the conveyance devices are arranged so that each through hole of the conveyance devices aligns in series.

20. The conveyance system of claim 19, further comprising:  
heating devices in each conveyance device which raise temperature of the load thrown in the through hole , until the load breaks away from each through hole.

21. The conveyance system of claim 18, wherein  
a plurality of the conveyance devices are arranged so that each through hole of the conveyance devices aligns in parallel.

22. The conveyance system of claim 18, wherein  
type of the fluids supplied from the fluid supplying devices of each conveyance device is variable.

23. A conveyance method comprising:  
a step of dropping a load from a top end of a through hole which is passing through a load supporting device in a gravity direction,

a step of supporting the load denying gravity, by supplying a fluid into the through hole, and

a step of stopping a support of the load by changing a flowing condition of the fluid, and allowing the load to break away from a bottom end of the through hole.

24. The conveyance method of claim 23, wherein the flowing condition of the fluid is varied by changing pressure and/or amount of the fluid.

25. The conveyance method of claim 23, wherein the flowing condition of the fluid is varied by closing at least a part of the through hole.

26. The conveyance method of claim 23, further comprising:  
a step of heating the fluid.

27. The conveyance method of claim 23, wherein the load is conveyed while the load is heated and fused.

28. The conveyance method of claim 23, wherein a deviation from spherical form of the load is half or less than average radius  $R$  of the load.

29. The conveyance method of claim 23, wherein the load is glass.

30. The conveyance method of claim 23, wherein the load is plastic.

31. The conveyance method of claim 23, wherein the fluid is a gas of a nitrogen concentration at 60 mol% or more.